

We Claim:

1. A semiconductor module, comprising:

a substrate body having an insulating ceramic layer with a top side, and a metal layer fixedly joined to said top side of said insulating ceramic layer; and

at least one semiconductor component disposed directly on said substrate body facing said metal layer, said semiconductor component having at least one connection conductor joined to said metal layer by welding.

2. The semiconductor module according to claim 1, wherein said insulating ceramic layer of said substrate body is formed of Al_2O_3 .

3. The semiconductor module according to claim 1, wherein said metal layer is formed of at least one material selected from the group consisting of copper and aluminium.

4. The semiconductor module according to claim 3, wherein said substrate body is at least one of a direct copper bonded substrate and an AMB substrate.

5. The semiconductor module according to claim 1, wherein said insulating ceramic layer contains AlN .

6. The semiconductor module according to claim 1, wherein said insulating ceramic layer contains BeO.
7. The semiconductor module according to claim 1, wherein said connection conductor is one of a plurality of connection conductors each formed of a at least one material selected from the group consisting of Cu, Al, CuSn and CnZn.
8. The semiconductor module according to claim 1, including a coating disposed on said metal layer.
9. The semiconductor module according to claim 1, wherein said connection conductor has a foot which is bent at right angles.
10. The semiconductor module according to claim 9, wherein said foot has at least one slot formed therein.
11. The semiconductor module according to claim 10, wherein said slot has a given width that is approximately equal to a thickness of said foot.
12. A method for fabricating a semiconductor module, which comprises the steps of:

providing a substrate body having an insulating ceramic layer and a metal layer disposed on and fixedly joined to a top side of the insulating ceramic layer;

disposing at least one semiconductor component directly on the substrate body facing the metal layer; and

joining at least one connection conductor to the metal layer by a welding process.

13. The method according to claim 12, which comprises joining the connection conductor to the metal layer by forming successive spot welds.